



PATENT

Attorney Docket No. 1006.F-5816 (0360-0093)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Julie Moriarty, et al.

Serial No.: 10/066,311

Filed: February 2, 2002

Group Art No.: 1723

Examiner: Kim, Sun U.

For: SHEAR-ENHANCED SYSTEMS AND
METHODS FOR REMOVING WASTE
MATERIALS AND LIQUID FROM
THE BLOOD

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Alexandria, VA 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. §1.97, Applicant hereby calls the Examiner's attention to the document listed on the attached form, which document may be material to the examination of this application. A copy of the document is enclosed herewith for the Examiner's consideration.

No inference should be drawn that any apparatus or method

assertion that more pertinent art could not possibly be in

as an admission that any subject matter disclosed in the document is necessarily within the inventive field of endeavor, that any disclosure is necessarily prior in time to a particular date which may be relevant to the instant patent application, and/or that any disclosure is otherwise necessarily prior art with respect to the instant invention.

Applicant also respectfully reserves the right to later set forth how the instant invention is distinguished over the disclosure of any document or other art, including the disclosure of the documents discussed herein, that may be cited by the Examiner in rejecting a claim in the instant patent application.

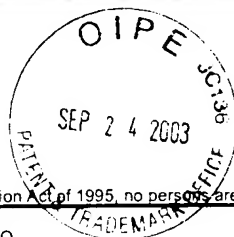
This Information Disclosure Statement is being filed after the mailing date of a first Office Action on the merits. Enclosed is a check in the amount of \$180.00 in payment of the filing fee for a supplemental information disclosure statement under 37 C.F.R. § 1.17(p). If it is determined that an additional fee is required, authorization is hereby given to charge Deposit Account 50-1039. (Fee Transmittal PTO/SB/17 is filed in duplicate herewith.)

Respectfully submitted,

Date: September 24, 2003

By: Gary W. McFarron

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PTO/SB/08A (04-03)

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1

of 7

Complete if Known

Application Number	10/066,311
Filing Date	February 2, 2002
First Named Inventor	Julie Moriarty et al.
Art Unit	1723
Examiner Name	Kim, Sun U
Attorney Docket Number	F-5816 (0360-0093)

U. S. PATENT DOCUMENTS

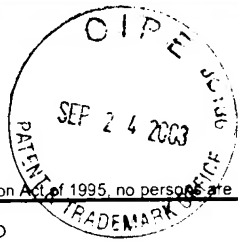
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	1	US- 2003/0155312	08-21-2003	Ivansons et al.	
	2	US- 1,664,769	04-03-1928	H.M. Chance	
	3	US- 2,197,509	04-16-1940	F.C. Reilly et al.	
	4	US- 2,294,248	08-25-1942	T.J. Smulski	
	5	US- 2,398,233	04-09-1946	R.L. Lincoln	
	6	US- 2,670,849	03-02-1954	R.P. Dunmire	
	7	US- 2,709,500	05-31-1955	W.R. Carter	
	8	US- 3,026,871	03-27-1962	A. Thomas	
	9	US- 3,183,908	05-18-1965	S.C. Collins et al.	
	10	US- 3,355,382	11-28-1967	M.G. Huntington	
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	18	US- 3,647,632	03-07-1972	D.E. Johnson et al.	
	19	US- 3,674,440	07-04-1972	S.S. Kitrilakis	

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	01	WO 81/02979	10-29-1981	Bilstad, A		
	02	WO 82/03567	10-28-1982	Dorson, Jr. W J		
	03	WO 82/03568	10-28-1982	Dorson, Jr. W J		
	04	WO 85/02783	07-04-1985	Shmidt, I		
	05	WO 85/04112	09-26-1985	Schoendorfer, D		
	06	1 480 406 (England)	07-20-1977	Gaylor, J		

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Sheet 2

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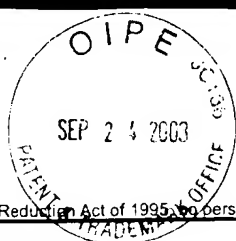
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	20	US- 3,705,100	12-05-1972	W.F. Blatt et al.	
	21	US- 3,750,885	08-07-1973	Fournier	
	22	US- 3,771,658	11-13-1973	Brumfield	
	23	US- 3,771,899	11-13-1973	Brumfield	
	24	US- 3,795,318	03-05-1974	Crane, et al.	
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	27	US- 3,847,817	11-12-1974	Jarman	
	28	US- 3,883,434	05-13-1975	Gayler	
	29	US- 3,900,290	08-19-1975	Hornstra	
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	31	US- 3,946,731	03-30-1976	Lichtenstein	
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	36	US- 4,082,668	04-04-1978	Zeineh, et al.	
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	38	US- 4,113,614	09-12-1978	Rollo, et al.	

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	07	1 283 273 (England)	09-26-1972	Blatt, W et al.		
	08	1 583 221 (France)	10-24-1969	Lucien A et al.		
	09	DE 3043682 (Germany)	07-30-1981	Eitle, W et al.		
	10	1 442 874 (Germany)	11-02-1963			
	11	SU197801 (Russia)	11-02-1963			
	12	771142-5 (Sweden)	10-1977			

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	39	US- 4,184,952	01-22-1980	Stewart	
		US- 4,191,182	03-04-1980	Popovich et al.	
	40	US- 4,212,741	07-15-1980	Brumfield	
	41	US- 4,212,742	07-15-1980	Solomon, et al.	
	42	US- 4,214,990	07-29-1980	Joh	
	43	US- 4,303,068	12-01-1981	Zelman	
	44	US- 4,381,999	05-03-1983	Boucher, et al.	
	45	US- 4,412,553	11-01-1983	Kopp et al.	
	46	US- 4,444,596	04-24-1984	Gortz, et al.	
	47	US- 4,486,303	12-04-1984	Brous	
	48	US- 4,490,135	12-25-1984	Troutner	
	49	US- 4,493,693	01-15-1985	Bilstad, et al.	
	50	US- 4,535,062	08-13-1985	Muller	
	51	US- 4,579,662	04-01-1986	Jonsson	
	52	US- 4,876,013	10-24-1989	Shmidt, et al.	
	53	US- 4,790,942	12-13-1988	Shmidt, et al.	
	54	US- 5,034,135	07-23-1991	Fischel	
	55	US- 5,194,145	03-16-1993	Schoendorfer	
		US-			

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	13	0 052 004 A1	05-19-1982	Ash, S		
	14	0112152 A2	06-27-1984	Fischel, H		
	15	0076665 A2	04-13-1983	Ramstack, J M		

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Sheet <u>4</u> of <u>7</u>													

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	53	US- 4,876,013	10-24-1988	Shmidt, et al.	
	54	US- 4,790,942	12-13-1988	Shmidt, et al.	
	55	US- 5,034,135	07-23-1991	Fishel	
	56	US- 5,194,145	03-16-1993	Schoendorfer	
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Sheet 5 of 7

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First Named Inventor Julie Moriarty, et al.
Group Art Unit 1723
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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	01	A.K. BHAGAT/C.R. WILKE, "Filtration Studies with Ultrafine Particles", 9/66. University of California, Lawrence Radiation Laboratory, Berkeley, CA, UCRL-16574, preprint release for announcement in Nuclear Science Abstracts	
	02	CASTINO, F.: "The Filtration of Plasma From Whole Blood: A Novel Approach To Clinical Detoxification", Publication #395 from the Blood Research Laboratory, The American National Red Cross	
	03	COLTON, C. K.: Fundamentals of Gas Transport in Blood, reprinted from "Artificial Lungs for Acute Respiratory Failure. Theory and Practice," W.M. Zapol and J. Qvist, Eds., Academic Press, N.Y. (1976)	
	04	EKSTEIN, E. C., et al.: "Self-Diffusion of Particles in Shear Flow of a Suspension", J. Fluid Mech. 1977, vol. 79, part 1, pp. 191-208	
	05	FORDSTROM, R. J., et al.: "Formed Element Deposition onto Filtering Walls", vol. XXI Trans. Amer. Soc. Artif. Int. Organs, 1975	
	06	GAYLOR, J. D., et al.: "Gas Transfer and Thrombogenesis In An Annular Membrane Oxygenator With Active Blood Mixing", vol. XIX Trans. Amer. Soc. Artif. Int. Organs, 1973	
	07	HALLSTROM, B., et al.: "Descriptions of a Rotating Ultra-filtration Module", Department of Food Engineering, Lund University (Sweden)	
	08	KITRILAKIS, S., et al.: "A Rotating Disk Membrane Oxygenator", 1976 Hemisphere Publishing Corporation, Washington-London	
	09	KOZINSKI, A. A.: "Protein Ultrafiltration: A General Example of Boundary Layer Filtration", AIChE Journal, vol 18, No. 5, September 1972	
	10	LIEBERHERR, J.: "Hydrodynamic of Annular Gap Flo Between Permeable Cylinder Walls", 532 54 66 067.17, Escher Wyss Mitteilungen 2/1978-1/1979	
	11	LOPEZ-LEIVA: "Ultrafiltration at Low Degrees of Concentration. Technical Possibilities"	

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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	12	LOPEZ-LEIVA: "Ultrafiltration In Rotary Annular Flow"	
	13	MARGARITIS, A. and WILKE, C.: "Engineering Analysis of the Rotorfermentor", Department of Chemical Engineering and Lawrence Berkeley Laboratory, University of California 94720	
	14	ROBINSON, A.: "How Does Fluid Flow Become Turbulent", Science, 221:140, July 1983	
	15	SCHINDHELM, K., et al.: "Mass Transfer Characteristics of Plasma Filtration Membranes", Trans. Am. Soc. Artificial Organs, vol XXVII 1981, pp. 554-558	
	16	SCHLICHTING, H., et al.: "Boundary-Layer Theory", 6th Ed. McGraw-Hill Series In Mechanical Engineering	
	17	SHERWOOD, T.K.: Desalination by Reverse Osmosis, I & EC Fundamentals, v6 (1):2-12, Feb. 1967	
	18	SOLOMON, B.A.: "Membrane Separations: Technological Principals and Issues", Trans Am Soc Artif Intern Organs 1981, pp. 345-350	
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	20	STRONG, A.B.: An Experimental Study of Mass Transfer in Rotating Coneote Flow with Low Axial Reynolds Number, The Canadian Journal of Chemical Engineering, Vol. 54, August, 1976	
	21	TAYLOR, G.I.: "Stability of a Viscous Liquid Cotained Between Rotating Cylinders", Phil Trans Roy. Soc., A 223:289 (1923)	
	22	TAYLOR, G.I.: "Distribution of Velocity & Temperature Between Concentric Rotating Cylinders", Taylor, "Proc. Roy. Soc." A, vol. 135, p. 698 (1932)	

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Examiner Name Kim, Sun U
Attorney Docket Number F-5816 (0360-0093)

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	24	WERYNSK, A.: "Membrane Plasma Separation: Toward Improved Clinical Operation," Trans. Am. Soc. Artificial Organs, vol XXVII 1981, pp. 554-558	
	25	T.B. WILTBANK, et al.: "Filtration Plasmapheresis in Vivo", Transfusion, vol 21. No. 5, pp. 502-510 (undated)	
	26	ZYDNEY, A.L. et al.: "Continuous Flow Membrane Plasmapheresis: Theoretical Models For Flux And Hemolysis Prediction"	
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